Agency for Healthcare Research and Quality
Advancing Excellence in Health Care

NATIONAL QUALITY MEASURES CLEARINGHOUSE

General

Title

Dental care: percentage of enrolled children in the age category of 10 to 14 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent second molar tooth as a dental service within the reporting year.

Source(s)

American Dental Association (ADA). Dental Quality Alliance user guide for measures calculated using administrative claims data, version 2.0. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 27 p. [26 references]

American Dental Association (ADA). DQA measure technical specifications: administrative claims-based measures prevention: sealants for 10-14 year-old children at elevated risk, dental services. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 7 p.

Measure Domain

Primary Measure Domain

Clinical Quality Measures: Access

Secondary Measure Domain

Does not apply to this measure

Brief Abstract

Description

This measure is used to assess the percentage of enrolled children in the age category of 10 to 14 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent second molar tooth as a dental service within the reporting year.

Rationale

Dental caries is the most common chronic disease in children in the United States (Centers for Disease Control and Prevention [CDC], 2014). In 2009 to 2010, 14% of children aged 3 to 5 years had untreated

dental caries. Among children aged 6 to 9 years, 17% had untreated dental caries, and among adolescents aged 13 to 15, 11% had untreated dental caries (Dye, Li, & Thornton-Evans, 2012). Identifying caries early is important to reverse the disease process, prevent progression of caries, and reduce incidence of future lesions. Approximately three quarters of children younger than age 6 years did not have at least one visit to a dentist in the previous year (Edelstein & Chinn, 2009). Evidence-based clinical recommendations recommend that sealants should be placed on pits and fissures of children's primary and permanent teeth when it is determined that the tooth, or the patient, is at risk of experiencing caries. The evidence for sealant effectiveness in permanent molars is stronger than evidence for primary molars (Beauchamp et al., 2008).

Evidence for Rationale

American Dental Association (ADA). DQA measure technical specifications: administrative claims-based measures prevention: sealants for 10-14 year-old children at elevated risk, dental services. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 7 p.

Beauchamp J, Caufield PW, Crall JJ, Donly K, Feigal R, Gooch B, Ismail A, Kohn W, Siegal M, Simonsen R, American Dental Association Council on Scientific Affairs. Evidence-based clinical recommendations for the use of pit-and-fissure sealants: a report of the American Dental Association Council on Scientific Affairs. J Am Dent Assoc. 2008 Mar;139(3):257-68. PubMed

Centers for Disease Control and Prevention (CDC). Hygiene-related diseases: dental caries (tooth decay). [internet]. Atlanta (GA): Centers for Disease Control and Prevention (CDC); 2014 Dec 16 [accessed 2015 Jul 18]. [2 references]

Dye BA, Li X, Thornton-Evans G. Oral health disparities as determined by selected healthy people 2020 oral health objectives for the United States, 2009-2010. NCHS Data Brief. 2012 Aug;(104):1-8. PubMed

Edelstein BL, Chinn CH. Update on disparities in oral health and access to dental care for America's children. Acad Pediatr. 2009 Nov-Dec;9(6):415-9. PubMed

Primary Health Components

Dental care; dental caries; elevated risk; sealants; permanent second molar tooth; children; adolescents

Denominator Description

Unduplicated number of enrolled children age 10 to 14 years at "elevated" risk (i.e., "moderate" or "high") (see the related "Denominator Inclusions/Exclusions" field)

Numerator Description

Unduplicated number of enrolled children age 10 to 14 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent second molar tooth as a dental service (see the related "Numerator Inclusions/Exclusions" field)

Evidence Supporting the Measure

Type of Evidence Supporting the Criterion of Quality for the Measure

A clinical practice guideline or other peer-reviewed synthesis of the clinical research evidence

One or more research studies published in a National Library of Medicine (NLM) indexed, peer-reviewed journal

Additional Information Supporting Need for the Measure

Oral health is essential to the general health and well-being of all Americans. Poor oral health can have a significant impact on children's overall health, growth and development, and learning (U.S. Department of Health and Human Services [HHS], 2000; Jackson et al., 2011). Between 1990 and 2009, Medicaid dental expenditures grew from $756.1 million to $7.1 billion, or from 2.4% to 7.0% of total dental expenditures (Centers for Medicare and Medicaid Services [CMS], 2012).

According to the Centers for Disease Control and Prevention (CDC) (2010), dental caries remains the most common chronic disease of children aged 5 to 17 years—4 times more common than asthma (59% versus 15%). Ten million United States (U.S.) school age children have untreated decay, and there are profound disparities by race, socioeconomic status and geographic location (HHS, 2010). The National Health and Nutrition Examination Survey (NHANES) conducted between 1999 and 2004 shows that one in four children aged 2 to 5 years had one or more teeth affected by dental caries (untreated or filled, excluding missing teeth) and one in two children are affected by age 6 to 11 years (Dye et al., 2007). One in ten children aged 6 to 8 have dental caries in the permanent dentition (untreated or filled, excluding missing teeth) and one in two children are affected by age 12 to 15 years.

Data collected by CMS (2013) indicate a lack of utilization of care at younger ages, lack of early prevention, and lack of adequate use of effective preventive modalities underscoring the need for improvement.

Evidence for Additional Information Supporting Need for the Measure

American Dental Association (ADA). Pediatric oral health quality and performance measures concept set: achieving standardization and alignment. Chicago (IL): Dental Quality Alliance (DQA); 2012. 24 p.

Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. Preventing chronic diseases: investing wisely in health: preventing dental caries with community programs. Atlanta (GA): Centers for Disease Control and Prevention; 2010.

Centers for Medicare & Medicaid Services. Annual EPSDT participation report, fiscal year: 2010. Baltimore (MD): Centers for Medicare & Medicaid Services; 2013. 153 p.

Centers for Medicare & Medicaid Services. National health expenditure data. [internet]. Baltimore (MD): Centers for Medicare & Medicaid Services; 2012.

Dye BA, Tan S, Smith V, Lewis BG, Barker LK, Thornton-Evans G, Eke PI, BeltrÃin Aguilar ED, Horowitz AM, Li CH. Trends in oral health status: United States, 1988-1994 and 1999-2004. Vital Health Stat 11. 2007 Apr;(248):1-92. PubMed

Jackson SL, Vann WF, Kotch JB, Pahel BT, Lee JY. Impact of poor oral health on children's school attendance and performance. Am J Public Health. 2011 Oct;101(10):1900-6. PubMed

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2010. [internet]. Rockville (MD): U.S. Department of Health and Human Services; 2010.

U.S. Department of Health and Human Services. Oral health in America: a report of the Surgeon General. Rockville (MD): U.S. Department of Health and Human Services, National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000 Sep. 308 p.

Extent of Measure Testing

In 2012, the Dental Quality Alliance (DQA) proposed a Starter Set of Pediatric Oral Health Performance Measures that could be calculated using administrative data (DQA, 2013). A multidisciplinary research team at the University of Florida was selected to conduct feasibility, reliability and validity testing of the measures through a competitive request for proposal (RFP) process (DQA, 2012). Testing processes followed guidance on quality measure scientific acceptability from the National Quality Forum.

For additional details regarding measure testing, including methodology and outcomes, refer to *Testing Pediatric Oral Health Performance Measures in the Florida and Texas Medicaid and CHIP Programs* (see also the "Companion Documents" field).

Evidence for Extent of Measure Testing

Dental Quality Alliance. Dental Quality Alliance measure activities. [internet]. Chicago (IL): Dental Quality Alliance; 2013 [accessed 2013 Jul 28].

Dental Quality Alliance. Request for proposals to establish feasibility, reliability and validity of implementation of claims based pediatric oral health measures developed by the Dental Quality Alliance. Chicago (IL): Dental Quality Alliance; 2012.

Herndon JB. Testing pediatric oral health performance measures in the Florida and Texas Medicaid and CHIP programs. Chicago (IL): Dental Quality Alliance (DQA); 2013 Aug. 25 p.

State of Use of the Measure

State of Use

Current routine use

Current Use

not defined yet

Application of the Measure in its Current Use

Measurement Setting

Managed Care Plans

Professionals Involved in Delivery of Health Services

not defined yet

Least Aggregated Level of Services Delivery Addressed

Single Health Care Delivery or Public Health Organizations

Statement of Acceptable Minimum Sample Size

Unspecified

Target Population Age

Age 10 to 14 years

Target Population Gender

Either male or female

National Strategy for Quality Improvement in Health Care

National Quality Strategy Aim

Better Care

National Quality Strategy Priority

Health and Well-being of Communities
Prevention and Treatment of Leading Causes of Mortality

Institute of Medicine (IOM) National Health Care Quality Report Categories

IOM Care Need

Staying Healthy

IOM Domain

Effectiveness

Equity

Data Collection for the Measure

Case Finding Period

The reporting year can be either calendar year (January 1 to December 31) or federal fiscal year (October 1 to September 30)

Denominator Sampling Frame

Enrollees or beneficiaries

Denominator (Index) Event or Characteristic

Clinical Condition

Encounter

Patient/Individual (Consumer) Characteristic

Denominator Time Window

not defined yet

Denominator Inclusions/Exclusions

Inclusions
Unduplicated number of enrolled children age 10 to 14 years at "elevated" risk (i.e., "moderate" or "high")

Check if subject is at "elevated risk." If subject meets any of the following criteria, then include in denominator:

> The subject has a visit with a Current Dental Terminology (CDT) code = (D0602 or D0603) in the reporting year, OR
> The subject has a CDT Service Code among those in Table 1 of the original measure documentation in the reporting year, OR
> The subject has a CDT Service Code among those in Table 1 of the original measure documentation in any of the three years prior to the reporting year. (Note: The subject does not need to be enrolled in any of the prior three years for the denominator enrollment criteria; this is a "look back" for enrollees who do have claims experience in any of the prior three years).

Note: Check subject is continuously enrolled for at least 180 days. Continuous enrollment criteria requires that there be no gap in coverage.

Refer to the original measure documentation for codes and additional information.

Exclusions

> Medicaid/Children's Health Insurance Program (CHIP) programs should exclude those individuals who do not qualify for dental benefits. The exclusion criteria should be reported along with the number and percentage of members excluded.
> If age criterion is not met or there are missing or invalid field codes (e.g., date of birth), the enrollee does not get counted in the denominator.

Exclusions/Exceptions

not defined yet

Numerator Inclusions/Exclusions

Inclusions

Unduplicated number of enrolled children age 10 to 14 years at "elevated" risk (i.e., "moderate" or "high") who received a sealant on a permanent second molar tooth as a dental service

Check if subject received a sealant as a dental service:

> Current Dental Terminology (CDT) Code = D1351, AND
> Rendering Provider Taxonomy Code = any of the National Uniform Claim Committee (NUCC) maintained Provider Taxonomy Codes in Table 2 of the original measure documentation

Check if sealant was placed on a permanent second molar:

> Tooth-number = 2, 15, 18, or 31, using the Universe Numbering System

Note:

> *Identifying "Dental" Services*. Programs and plans that do not use standard NUCC maintained provider taxonomy codes should use a valid mapping to identify providers whose services would be categorized as "dental" services. Stand-alone dental plans that reimburse ONLY for services rendered by or under the supervision of the dentist can consider all claims as "dental" services. Services provided by county health department dental clinics may also be included as "dental" services.
> Only dental hygienists who provide services under the supervision of a dentist should be classified as "dental" services. Services provided by independently practicing dental hygienists should be classified as "oral health" services and are not applicable for this measure.

Refer to the original measure documentation for codes and additional information.

Exclusions

All claims with missing or invalid CDT code, missing or invalid NUCC maintained Provider Taxonomy Codes, or NUCC maintained Provider Taxonomy Codes that do not appear in Table 2 of the original measure documentation should not be included in the numerator.

Numerator Search Strategy

Fixed time period or point in time

Data Source

Administrative clinical data

Type of Health State

Does not apply to this measure

Instruments Used and/or Associated with the Measure

Unspecified

Computation of the Measure

Measure Specifies Disaggregation

Does not apply to this measure

Scoring

Rate/Proportion

Interpretation of Score

Desired value is a higher score

Allowance for Patient or Population Factors

not defined yet

Description of Allowance for Patient or Population Factors

The Dental Quality Alliance (DQA) encourages the measure results to be stratified by age, race, ethnicity, geographic location, socioeconomic status, payer type, and program/plan type. Such stratifications will enable implementers to identify variations in care by child and program characteristics, which can be used to inform quality improvement initiatives. To stratify the measure results, the denominator population is divided into different subsets based on different characteristics of interest (e.g., age, race/ethnicity, geographic location, etc.) and the rates are reported for each sub-population.

Age*: 10 (greater than or equal to 10 and less than 11); 11 (greater than or equal to 11 and less than 12); 12 (greater than or equal to 12 and less than 13); 13 (greater than or equal to 13 and less than 14); 14 (greater than or equal to 14 and less than 15)

*Age should be calculated as of the last day of the reporting year.

Standard of Comparison

not defined yet

Identifying Information

Original Title

Prevention: sealants for 10-14 year-old children at elevated risk, dental services.

Measure Collection Name

Dental Caries in Children: Prevention & Disease Management

Submitter

Dental Quality Alliance - Health Care Quality Collaboration

Developer

Dental Quality Alliance - Health Care Quality Collaboration

Funding Source(s)

The Dental Quality Alliance with support from the American Dental Association Foundation

Composition of the Group that Developed the Measure

Dental Quality Alliance (DQA)

Financial Disclosures/Other Potential Conflicts of Interest

To ensure that a collaborative and balanced approach is followed, the Dental Quality Alliance (DQA) requests that all individuals nominated to the Research & Development (R&D) Committee and its Workgroups complete a standard conflict of interest form.

Disclosed conflicts are not confidential. Unless the individual is disqualified to serve, his or her disclosures will be shared with the other members and be published with the report. Disclosure allows the DQA to maintain a transparent process and convene a balanced group.

For additional information on conflict of interest procedures, refer to *Procedure Manual for Performance Measure Development: A Voluntary Consensus Process* (see also the "Companion Documents" field).

Endorser

National Quality Forum - None

NQF Number

not defined yet

Date of Endorsement

2015 Dec 11

Adaptation

This measure was not adapted from another source.

Date of Most Current Version in NQMC

2016 Jan

Measure Maintenance

Annual

Date of Next Anticipated Revision

2017 Jan

Measure Status

This is the current release of the measure.

This measure updates previous versions:

American Dental Association (ADA). Dental Quality Alliance measures user guide. Chicago (IL): Dental Quality Alliance (DQA); 2013 Jul 19. 13 p.
American Dental Association (ADA). DQA measure specification sheet: prevention: sealants for 10-14 year-old children at elevated risk. Chicago (IL): Dental Quality Alliance (DQA); 2013 Jul 19. 9 p.

Measure Availability

Source available from the American Dental Association (ADA) Web site .

For more information, contact ADA at 211 E. Chicago Ave, Chicago, IL 60611; Phone: 312-440-2500; Web site: www.ada.org .

Companion Documents

The following are available:

American Dental Association (ADA). Procedure manual for performance measure development: a voluntary consensus process. Chicago (IL): Dental Quality Alliance (DQA); 2013 Apr 23. 36 p.
Herndon JB. Testing pediatric oral health performance measures in the Florida and Texas Medicaid and CHIP programs. Chicago (IL): Dental Quality Alliance (DQA); 2013 Aug. 25 p.

NQMC Status

This NQMC summary was completed by ECRI Institute on February 26, 2014. The information was verified by the measure developer on April 4, 2014.

This NQMC summary was updated by ECRI Institute on June 21, 2016. The information was verified by the measure developer on June 27, 2016.

Copyright Statement

Production

Source(s)

American Dental Association (ADA). Dental Quality Alliance user guide for measures calculated using administrative claims data, version 2.0. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 27 p. [26 references]

American Dental Association (ADA). DQA measure technical specifications: administrative claims-based measures prevention: sealants for 10-14 year-old children at elevated risk, dental services. Chicago (IL): Dental Quality Alliance (DQA); 2016 Jan 1. 7 p.

Disclaimer

NQMC Disclaimer

The National Quality Measures Clearinghouseâ„¢ (NQMC) does not develop, produce, approve, or endorse the measures represented on this site.

All measures summarized by NQMC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public and private organizations, other government agencies, health care organizations or plans, individuals, and similar entities.

Measures represented on the NQMC Web site are submitted by measure developers, and are screened solely to determine that they meet the NQMC Inclusion Criteria.

NQMC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or its reliability and/or validity of the quality measures and related materials represented on this site. Moreover, the views and opinions of developers or authors of measures represented on this site do not necessarily state or reflect those of NQMC, AHRQ, or its contractor, ECRI Institute, and inclusion or hosting of measures in NQMC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding measure content are directed to contact the measure developer.